

**Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section**

October 2004

**Responsiveness Summary for the
Public Comment Period and Hearing Concerning
Adkins Energy, LLC**

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Permit Numbers: 03060057
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Decision

On October 25, 2004, the Illinois Environmental Protection Agency (Illinois EPA) issued a Federally Enforceable State Operating Permit to Adkins Energy, LLC for the ethanol plant located at 4350 West Galena Road in Lena. Previously, the Illinois EPA had issued two construction permits, 03070046 and 03040053, on February 2, 2004 and March 12, 2004, respectively, which were also a subject of the public hearing.

Copies of the documents can be obtained from the contact listed at the end of this document. The permits and additional copies of this document may also be obtained from the Illinois Permit Database, www.epa.gov/region5/air/permits/ilonline.htm (please look under All Permit Records/FESOP/New).

Background

The public comment period opened with the publication of a hearing notice in the Freeport Journal Standard on November 3, 2003. The notice was again published in the Freeport Journal Standard on November 10 and 17, 2003. The Illinois EPA, Bureau of Air held a public hearing on December 18, 2003 at 7:00 p.m. at the Lena-Winslow Elementary School, 401 Fremont Street in Lena. The purpose of this public hearing was to accept oral comments into the written hearing record and answer questions about the proposed project. The public comment period remained open until January 18, 2004.

Comments and Responses

Introduction

1. What are the differences between the new feed dryer and the original feed dryer that Adkins installed with the plant and shut down in March 2003?

From an emissions perspective, the most significant difference between the dryers is the control equipment for organic emissions, which include the compounds responsible for odors. The new feed dryer has a separate combustion-type control device, a regenerative thermal oxidizer, to control these emissions. In addition to controlling the feed dryer, this new oxidizer also has the capacity to control emissions from the distillation system and the centrifuges at the plant. The original feed dryer did not include a separate combustion-type control device but was designed to control organic emissions by recycling most of the exhaust from the dryer back through the burner and furnace of the dryer. This difference also has implications for other aspects of the design of the dryers. The new dryer could be designed for effective drying with good fuel efficiency, consistent with standard design principles for design of feed dryers. The original dryer had to be designed for the additional function of emissions control. This resulted in an innovative design that, as confirmed by emission testing, failed to adequately control emissions.

2. There has got to be a better way to make ethanol from corn that does not require use of a fuel-fired feed dryer or is able to scrub all the pollutants out of the air.

While process technology and control equipment improve, the ideal systems suggested by this comment have not yet been developed for ethanol plants. Wet feed is dewatered by mechanical means prior to being dried, but heated dryers are still necessary to further reduce the moisture content to a level where feed can be stored for extended periods of time. Likewise, scrubbers are very effective at controlling emissions but cannot control 100 percent of the emissions and produce wastewater that must then be properly treated and handled.

Odors

3. The Adkins' plant is located in a rural area, where odors are common due to livestock and farming.

Irrespective of their location, sources and people should take reasonable measures to minimize the impact of their activities on their neighbors and to not be a nuisance. In addition, the Adkins plant is a manufacturing facility and the nature and potential magnitude of its impacts are different from those of other farming activities in the area.

4. Odors from the plant need to be reduced to a level so as to not interfere with the general use and enjoyment of the outdoors anywhere near the plant. Odors from the plant also need to be at a level at which they do not interfere with the operation of local schools and businesses.

This statement articulates several elements of the State of Illinois' definition of air pollution, " 'Air pollution' is the presence in the atmosphere of one or more contaminants in sufficient quantities and of such characteristics and duration as to be injurious to human, plant, or animal life, to health, or to property, or to unreasonably interfere with the enjoyment of life or property," Section 3.115 of the Environmental Protection Act.

5. What measures does the operating permit include to address odors?

As the permit requires Adkins to properly operate the plant to control emissions of organic material and hazardous air pollutants, the permit also requires Adkins to control emissions of odorous compounds. For this purpose, the permit establishes performance requirements for control equipment and limitations on emissions. The performance requirements are consistent with requirements set by USEPA for other new ethanol plants that have been developed in the Midwest over the last decade, as made applicable to this plant by the Agreed Order for Interim Injunctive Relief, in the matter of People of the State of Illinois v. Adkins Energy (Agreed Order). The limitations on emissions restrict the plant's emissions to below major source levels. The permit also includes extensive requirements for emissions testing, work practices, operational monitoring and recordkeeping to provide continuing verification of

compliance with its control requirements. These procedural requirements include provisions both to verify proper operation and to identify and explain deviations. As such, these procedural requirements will provide relevant data to facilitate investigation of odors that do occur, to determine whether they are attributable to an upset condition or improper operation or reflect a deficiency or limitation in the design of a particular unit. However, the requirements of the permit apply independently of the occurrence of any complaints from the public about odors from the plant.

6. Will this issuance of the operating permit resolve the odor problems that local residents have complained about? If not, why?

The new regenerative thermal oxidizer should effectively control odors from the units that it controls, i.e., the new feed dryer and existing distillation process and centrifuges. However, the dryer and associated oxidizer will not operate continuously. They will need to be shut down periodically for maintenance and may also experience unscheduled outages due to breakdowns. During these periods when the feed dryer and oxidizer are shut down, the distillation process will be controlled by the original scrubber control system, which will not be as effective as the thermal oxidizer. Also of concern will be whether the fermentation process or other secondary units at the facility, whose impacts may have been masked by distillation process, are now revealed as a significant source of odors.

7. What further steps does Illinois EPA expect Adkins Energy to take to address any further odor problems?

As a general matter, to solve an odor problem a plant must take actions to lower the emissions (improve control) or lower the ambient impacts (improve dispersion). At this time, it is inappropriate to speculate on the specific steps that would be pursued to address continuing odor problems from this plant.

8. The operating permit should cite 35 IAC 245.121, a provision of Illinois' regulations, as the relevant definition for what constitutes an unacceptable level of odors from the plant.

The suggested addition to the permit is not appropriate. The rule cited in this comment deals with objectionable odors from inedible rendering, which is a specialized industrial process that is not performed at this plant. As such, the provisions of the cited rule do not provide a legal basis to determine whether this plant is or is not the source of an unacceptable level of odors and the cause of an odor nuisance.

9. The operating permit should establish what constitutes an unacceptable level of odors. Various states have regulations that define the level of odors that constitutes an odor nuisance. In addition, the settlement agreement for the Gopher State Ethanol plant in St. Paul, Minnesota established an odor limit for that plant.

The permit generally requires Adkins to effectively control its emissions, which should prevent or minimize the occurrence of odors. It is not appropriate for the permit to go

beyond this as requested by this comment, to set specific criteria for what would or would not be considered an odor nuisance. In Illinois, the rulemaking necessary to set such criteria has not taken place. However, regulations also are not needed to determine whether or not a plant causes an odor nuisance.

The determination that a plant causes an odor nuisance entails an evaluation of the nature of the impacts of odors on affected parties, the actions taken by the source to prevent and mitigate odors, and the reasonableness or unreasonableness of the odors that still do occur in light of their impacts and the measures taken by the source. In certain circumstances, this can admittedly be a complex task. In Illinois, the existence of an odor nuisance is a matter that can only be definitively answered through the legal system, with such judgment ultimately resting with the Pollution Control Board or the Courts. Rulemaking has not been attempted to generically answer the question whether a plant such as Adkins should be considered to be causing an odor nuisance. In any event, such rulemaking would not provide a definitive answer to this question in a specific case as the parties in the case, either the public or the source, could still go to the Board or a court for site-specific relief or consideration.

Given these circumstances, the issuance of the permit does not act to shield Adkins from having to undertake further actions as may be needed to eliminate air pollution caused by the plant, including nuisance due to odors. This is explicitly stated in the permit to avoid any confusion about the role of the permit in the resolution of concerns about odors from the plant. Even if it were not stated, as a legal matter, the issuance of the permit does not act to shield Adkins from applicable statutory or regulatory requirements related to control of emissions, including the general obligation not to cause an odor nuisance.

10. The permit should require Adkins to conduct ambient air testing or ambient monitoring to measure the concentrations of pollutants in the atmosphere beyond the boundaries of the plant.

For a number of reasons, ambient testing or monitoring, as requested by this comment, would not be an effective way to address the underlying concern about the effect of the Adkins' plant on the air quality in Lena. Because of these limitations, the impacts of individual plants on air quality are evaluated using computerized dispersion modeling. These analyses can quickly predict the concentrations of pollutants that may occur at different receptor locations in an area hour-by-hour, based on the maximum emission rates of a facility and actual weather data from a period of several years.

In particular, an ambient monitor would only provide data from one location and would measure the combined contribution from all sources in the area and the background levels of air pollution entering the area. If the monitor were located near the plant's fence line, the monitor would not provide meaningful data on the actual air quality as experienced by the residents of Lena or nearby residents. It also would not necessarily fully address the impacts of the plant, as emissions are released from elevated stacks and peak ambient impacts do not always occur at the fence line. For cost-effective

monitoring and to assure that a large enough sample is taken to allow accurate laboratory analysis, the sampling period would likely be at least 24-hours, rather than an hour. As wind speed and direction vary hour by hour, the ambient monitor would only address the contribution of the Adkin's plant on air quality under a limited set of wind and weather conditions. Even to experience the full range of those weather conditions, the monitor would have to be operated for at least a year. Finally, the extent of data collected by the monitor would be further reduced as the plant was not operating or was operating at reduced rates during those meteorological conditions when the wind direction was toward the monitor. None of these drawbacks are present with dispersion modeling, so that it is a much more effective technique than ambient monitoring to assess the possible impacts of a particular plant.

11. Do the emissions and odors from the Adkins' plant pose a threat to public health?

The dispersion modeling that Adkins has had performed pursuant to the Agreed Order, which addresses the plant after the original feed dryer was shut down, indicates that the plant has not posed a significant threat to general public health. This does not mean that certain individuals have not experienced effects from the plant, as certain compounds in the emissions can irritate the eyes or respiratory tract or certain individuals have developed allergic reactions to the odorous compounds. Under the Agreed Order, now that the new feed dryer and thermal oxidizer have been installed, Adkins must have further dispersion modeling performed to evaluate the impacts of the plant.

More importantly, the analysis that has already been conducted and information to date suggests that resolution of odor problems with the plant should assure that the plant does not have a significant effect on public health. In this regard, even though certain compounds, notably acetaldehyde, have health impacts below their odor detection threshold, there are other compounds in the emission that would also be present in concentrations in the air that should be detected by their odor.

Status of the Plant

12. The wording of certain provisions in the permit should be modified to reflect the fact that there is not yet emission data to demonstrate that the planned operation of the plant will not be a major source of emissions of hazardous air pollutants. The permit needs alternative language that recognizes that Adkins must test the actual performance of the new feed dryer and regenerative thermal oxidizer to demonstrate that it will not be a major source of emissions, consistent with the federal Agreed Stay Order.

In response to this comment, the issued FESOP has been modified to further explain how the permit restricts the emissions of the plant. However, the Illinois EPA cannot modify the permit as specifically requested by this comment. This is because the requested language would imply that the conditions of the permit addressing emissions of the new feed dryer and the control efficiency of the associated regenerative thermal oxidize are not immediately enforceable and instead only become enforceable when and

if Adkins has completed emission testing showing that it can comply with those requirements.

Instead, the draft FESOP addressed the issue of future test results through its limited duration. Unlike a typical FESOP, which is issued for a term of five years, this FESOP is being issued for a period of time that is linked to the startup, shakedown and testing of the new equipment, which is addressed by the construction permit. That construction permit provides for the orderly shakedown and testing of the new dryer to verify compliance with applicable requirements. It then allows for a further 180 days of operation. This further 180-day period is also reflected in the FESOP, at the conclusion of which the FESOP expires. This provides Adkins with an appropriate period of time to apply to renew the FESOP, based upon an application that contains emission test results for the new equipment. This time period is consistent with Section 39 of the Environmental Protection Act, which provides the Illinois EPA with 180 days to act on a state permit application when a public comment period is required.

13. Any small deviations, e.g., a small loss in control efficiency, could trigger exceedances of the major source threshold because the permitted emissions of the plant, as established by the FESOP, are nearly equal to the major source threshold amounts.

Overall, the provisions of the operating permit should be fully adequate to account for any small deviations from individual requirements, as addressed by this comment, and still assure that the plant is not a major source of emissions. This is because of various elements in the permit that provide “over control” and “double-count” emissions. Because of this, it would be inappropriate to add any excess emissions from small deviations and the permitted emissions of the plant to conclude that the plant is a major source of emissions.

First, the permit directly requires that the actual emissions of the fermentation system, distillation system and feed dryer, key units at the plant, routinely be well below the permitted level. In particular, the operating requirements for the scrubbers for the fermentation and distillation system are based on the actual level of operating parameters during testing, which based on test results were accompanied by emissions that were approximately half the permitted rates. In addition, if the compliance margin for one of these units when tested in the future is less than 20 percent, Adkins must carry out a Control Improvement Program with the objective of achieving compliance by a margin of at least 20 percent, followed by further testing at the end of the program. Second, for purposes of establishing the status of the source, no credit is taken for the use of the thermal oxidizer to control the emissions of distillation units. Instead, the permit accounts for these distillation units as if they always exhaust through the distillation scrubber, rather than only during periods when the thermal oxidizer is not in service and the distillation scrubber is used as the back-up control device.

14. In most cases, when a source requests federally enforceable levels that are more than 80 percent of the major source emission thresholds, the Illinois EPA is reluctant to issue a FESOP. Instead, the Illinois EPA asks the source to seek a major source permit.

This is not correct. The Illinois EPA routinely issues FESOP that provide permitted emissions that are greater than 80 percent of the major source thresholds. As these permits are developed to constrain sources' emissions to below major source thresholds, the concern for these permits, like any FESOP, is including an appropriate collections of restrictions in the permit, accompanied by an appropriate set of compliance procedures, to effectively limit the source's emissions.

15. What is the regulatory reference for requiring compliance by a margin that is at least 20 percent greater than the manufacturer's guarantees?

The provisions addressed by this comment effectively require that during emissions testing Adkins demonstrate an emission level for certain units that is 20 percent lower than that normally relied upon by Adkins for the units. These provisions have their basis in USEPA policy that requires limitations on a source's potential emissions to be enforceable as a practical matter, *Guidance on Limiting Potential to Emit in New Source Permitting*, June 13, 1989.

The provisions apply to the key control systems at the plant, i.e., the fermentation system, the distillation system and the feed dryer. The provisions further account for the possibility of aberrations in the actual, day-to-day performance of these units as compared to tested operation, which is performed over a period of only a few hours. These provisions were placed in the permit given the circumstances of this plant, including its initial operating history, to provide a high degree of practical enforceability to the permit as it is intended to restrict the plant's potential emissions. The provisions provide further assurance that the plant will not be a major source of emissions, as emissions of the principal emission units should normally be significantly less than the level relied upon by Adkins to maintain non-major status.

As should be evident from the above discussion, these provisions do not address compliance with manufacturers' guarantees for equipment nor is emission testing that shows compliance by a margin less than 20 percent considered a violation, as suggested by the comment. Rather, these provisions relate to the level of performance relied upon by Adkins on a day-to-day basis for certain key units at the source. The objective set for emission testing of these units is to demonstrate significantly better performance than the level of performance relied upon by Adkins to demonstrate that the plant is not a major source of emissions. Test results that do not meet this objective are not considered a violation but do trigger requirements for remedial action followed by further emissions testing to demonstrate that this objective has been satisfied.

16. What is the regulatory basis to set limitations on hazardous air pollutants emissions from individual units rather than simply limiting the total annual emissions of hazardous air pollutants from the plant to below the levels at which the plant would be considered a major source?

Like the provisions for emissions of other pollutants, these limitations for emissions of

hazardous air pollutants have their basis in USEPA policy that requires limitations on a source's potential emissions to be enforceable as a practical matter. Given the circumstances of this plant, including its initial operating history, it is appropriate to provide a high degree of practical enforceability for the provisions of the permit that address status of the plant with respect to emissions of hazardous air pollutants. Such practical enforceability necessitates limitations on individual units so that the status of the plant can be reviewed based on performance of individual emission units, without having to conduct a comprehensive review of all emission units. In addition, practical enforceability necessitates short-term limitations on the emissions of individual units, in a form that is consistent with the emission testing that has been and will be performed.

Coordination with Court Orders

17. The FESOP does not include a schedule for Adkins to install its feed dryer and new regenerative thermal oxidizer, as required by the federal Agreed Stay Order.

Adkins has installed the new feed dryer and regenerative thermal oxidizer, so that this comment is no longer relevant. In addition, as a general matter, schedules for installation of equipment are not normally included in state permits unless an explicit deadline or schedule for construction has been established by rule or other legal action. This is not the case, as the comment relies on a particular interpretation of this federal order to conclude that the dryer had to be installed by a specific date. The explicit terms of the order only require Adkins to demonstrate that it is not a major source of emissions under the Clean Air Act. To the extent that this particular interpretation of the order is appropriate, it is directly enforceable under the order and need not be restated in the permit.

18. The FESOP should address the requirements of the state court order that require Adkins to perform dispersion modeling and conduct odor assessments for the plant.

These requirements of the order are not suitable for inclusion in the FESOP. This is because they involve technical and legal issues that go beyond the scope of permitting. However, a provision has been included in the issued FESOP recognizing the independent existence of the state court order and the requirements it places on Adkins Energy. Another provision has also been added to the permit recognizing the independent existence of the Agreed Stay Order in *Neighbors for Good Neighbors, LLC, vs. Adkins Energy*.

19. The FESOP should establish standards for the concentrations of hazardous air pollutants in the ambient air.

It is not appropriate for such standards to be established in a FESOP. Ambient air quality standards should only be established through a rulemaking proceeding. This allows all relevant information to be publicly presented and considered by an administrative body with the authority to adopt such standards.

Other Comments on Permit Conditions

20. There is a discrepancy between the operating limitations on the plant in terms of grain input and fuel ethanol output.

The apparent discrepancy is a result of the nature of grain ethanol plants, which use fermentation with yeast, a biological process, to convert the carbohydrate in grain into ethanol. Because of improvements in this process over time with continuing research and experience, the yield from an ethanol plant, gallons of ethanol per bushel of grain, is not static and should gradually increase. Adkins indicates that due to this phenomenon, the design of this plant was developed based upon grain input, not ethanol output. Accordingly, the limitation in the permit for ethanol output from the plant is intended to accommodate improvements in its ethanol yield.

21. The limitations for particulate matter (PM) emission from grain handling and process units need to be revised to be consistent with the application. Additional air pollution control devices may be needed to meet the overall control efficiency requirement of 90 percent.

This comment is based on information in the application on PM emissions that was superseded by more accurate information. As a general matter, the fabric filters used to control emissions from grain handling and other material handling operations at the plant should comply with the conservative emission limitations set in the FESOP, which are based on the typical value of guaranteed performance for such systems in terms of outlet dust loading, i.e., 0.01 grain/standard cubic foot. For the grain handling operations, these filter systems should readily achieve the 90 percent control device efficiency required by applicable state rules.

22. The permit should require the PM emissions from the grain handling operations to be verified by emission testing.

FESOP permits do not routinely require emission testing of grain handling operations. The PM emissions from grain handling operations are readily controlled and the filter systems or baghouses, which are like vacuum cleaners, provide very effective control. In this regard, even the federal Consent Decree for Gopher State Ethanol does not require emission testing be performed for grain handling operations. Accordingly, the permit for the Adkins plant does not require mandatory PM testing for the grain handling operations at the plant. However, as a cautionary measure, the permit does require that Adkins have such testing performed upon request by the Illinois EPA, to address the possibility that circumstances might develop in which such testing would become desirable.

23. Even though opacity standards are cited in the provisions of the permit for grain handling operations, the permit does not include requirements for monitoring opacity.

Compliance with the opacity standards can be formally determined by visual observations by qualified observers in accordance with USEPA Reference Method 9.

Opacity monitoring systems are not needed to make these determinations nor would such systems be effective as such standards apply to fugitive emissions. However, the permit does require Adkins to conduct visual inspections of grain handling operations on a regular schedule to confirm that equipment is operating properly. Improper operation should be readily identifiable either directly, by observation of the exhaust, or indirectly, by the presence of accumulations of dust in the vicinity of the baghouse.

24. The permit should include requirements for cleaning of the baghouses that control particulate matter emissions from the grain handling operations.

FESOP permits for grain handling operations do not routinely include requirements that address baghouse cleaning, i.e., the periodic removal of dust from the filter cloth. Cleaning is an automatic function of a baghouse unit, which may be initiated either by a timer or based on the pressure drop across the unit. In either case, the source is responsible for proper operation of the baghouse, with timely adjustment of the cleaning cycle to respond to changes in the condition of dust or the filter material, just as the source is responsible for proper maintenance and repair of the baghouse itself.

25. Based on the results of emission testing in August 2003, the fermentation scrubber and distillation scrubber will need to operate with at least 98 percent efficiency, rather than 95 percent efficiency, as specified by the permit, to meet the emission limits established for these units to keep the plant below the major source thresholds.

This is correct, based on the inlet loading to the control devices during the period of testing. And the testing did demonstrate that these scrubbers were achieving greater than 98 percent control. However, this does not mean that the FESOP should directly require 98 percent control as implied by this comment, rather than 95 percent control as required by the FESOP. It is sufficient to indirectly require that the higher level of control be achieved, as the FESOP requires that the scrubbers be operated with key operating parameters within the range during emission testing.

The control efficiency requirements of the FESOP for these units are an “independent” requirement of the permit, separate from the requirements established to address the status of the source. These control requirements have their basis in the state Agreed Order, which requires at least 95 percent reduction in organic emissions of these units, or outlet emissions of no more than 20 ppm, if the inlet concentration is less than 200 ppm (Section VIII, Paragraph A(1)(b)(i) of the Agreed Order). These requirements derive from federal Consent Decrees addressing other new ethanol plants in Minnesota, such as the decree for Gopher State Ethanol in St. Paul and Pro-Corn in Preston , as a determination of the appropriate performance levels for the emission control systems installed at a new ethanol plant.

Control efficiency requirement are not needed for these units to keep the plant below the major source thresholds. For this purpose, it is sufficient for the FESOP to limit the rates of emissions to the atmosphere. In this regard, the August 2003 testing showed actual organic material emission rates that were roughly half the emission limits

proposed by Adkins to demonstrate non-major status, which were subsequently included in the FESOP. Again, as noted above, as the FESOP also requires that these scrubbers be operated with key operating parameters within the range during emission testing, the FESOP indirectly requires that the lower rates of emissions achieved during testing be maintained on a continuing basis.

26. The description in the draft FESOP of the changes to the plant indicates that redirecting distillation emissions to the oxidizer will increase the volume of cold water available for the fermentation scrubber and act to increase its control efficiency. There is no evidence to suggest that increasing water flow in the fermentation scrubber will cause additional removal of organic emissions by that device. If adjustments in the required water flow rate are needed, then emission testing will be required.

This statement is generally supported by the principles of scrubber design, which indicate a positive correlation between the amount of scrubbant and the efficiency of a scrubber. The availability of additional water for the fermentation scrubber is also an indirect result of the use of the thermal oxidizer to control the distillation process, which should be recognized. However, this comment correctly observes that further emission testing would be needed if Adkins wants to rely on a lower rate of emissions from the fermentation system as a result of a higher water flow rate. Adkins would then have to commit to operate the scrubber at the higher flow rate, consistent with the operating conditions during the test.

27. When the distillation scrubber is restarted for use in its backup capacity, when the thermal oxidizer is out of service, it is likely that its control efficiency will not be 99 percent. This is because scrubbers work best at steady state conditions accompanied by routine maintenance. Accordingly, a continuous emissions monitoring device or equivalent device should be installed on the scrubber to enable the actual emissions to be measured.

The issued FESOP addresses these concerns about the condition of the distillation scrubber when called upon for backup service with additional requirements for recordkeeping. It is not appropriate to require a continuous monitoring device to be used for this purpose on a speculative basis, assuming that problems will exist.

28. There are various inaccuracies in the handling of minor emission units. For example, the draft FESOP incorrectly shows the Evaporator Syrup Tank, Thin Stillage Tank, and Whole Stillage Tank as ducted to the distillation scrubber.

These errors have been corrected in the issued FESOP and associated emissions appropriately addressed.

29. It is not clear why the provisions of certain federal New Source Performance Standards, 40 CFR 60, Subparts NNN and RRR are not applicable to the distillation operations at the plant.

These requirements have not been included in the FESOP based on guidance from

USEPA indicating that these regulations do not apply to fuel ethanol plants. This because they are related to a biological process, fermentation, and were not addressed by USEPA during the development of these regulations.

30. Adkins needs to demonstrate that the thermal oxidizer can accommodate the increased air flow and loading from distillation.

The thermal oxidizer should be adequate to handle the additional volume of exhaust from the distillation operation. First, Adkins decided to install a larger model of oxidizer to assure adequate capacity for the dryer. Second, the distillation operation has a small exhaust flow rate compared to the dryer, so that it does not pose a significant concern for the capacity of the oxidizer.

31. When the distillation operation is controlled by the thermal oxidizer, it should not be allowed to comply by diluting its exhaust with the exhaust from the feed dryer.

As a practical matter, dilution of emissions, as raised by this comment, should not be a concern. This is because the feed dryer must also be effectively controlled with at least 95 percent control of organic emissions (a level which is identical to the control efficiency requirement for the distillation operation). For purposes of thermal efficiency, the amount of air introduced into the feed dryer must be carefully managed by Adkins, as excessive levels of air would increase the fuel consumption by the dryer and the thermal oxidizer. At the same time, it should be recognized that as a technical matter, once the emissions of the distillation operation and feed dryer enter the thermal oxidizer, it is no longer possible to distinguish those emissions for purposes of determining compliance. Accordingly, the FESOP sets a single set of emission limits for the “feed dryer” that includes all emissions from the units that are controlled with the dryer by the associated thermal oxidizer.

32. The draft FESOP does not appropriately address Clean-In-Place Cycles, which occurs about once a day, when a fermentation tank is cleaned with a hot caustic solution between each fermentation cycle. This may increase the operating temperatures in the scrubbers, especially during warmer weather. This is particularly significant because the issued FESOP will address the operating parameters of the scrubbers on an hour-by-hour basis, rather than as a 3-hour average.

The issued FESOP includes additional provisions to specifically address Clean-In-Place Cycles. These provisions allow higher levels of scrubber operating parameters attributable to a Clean-In-Place Cycle subject to additional requirements and recordkeeping, e.g., confirmation that a scrubber was properly operated and the incident was not due to some other cause. This action was taken because of the compliance margin demonstrated during emissions testing. However, the FESOP also requires that the plans for future emission tests include at least one test run during a Clean-In-Place Cycle.

33. The permits should impose additional or alternative requirements on the operation of the thermal oxidizer. For example, the permits should specify a minimum preheat time for the oxidizer. The FESOP should not allow operation of the oxidizer to be tested at alternative temperatures once initial emission testing has been conducted. The permits should specify the amount of time that emissions may be vented to the bypass stack. The permit should not specify that periods of excess emissions should include any 1-hour period when the average combustion temperature of the oxidizer was more than 50 °F below the temperature during testing, as excess emissions could occur when the temperature falls a few degrees below the set point.

Various minor changes have been made in the issued permits in response to these comments. However, the basic approach of the permits is unchanged as it is inappropriate to impose overly detailed requirements on equipment that is still undergoing shakedown.

For example, the permits do not set a specific time limit on the duration of venting to the bypass stack because there is not sufficient operational experience upon which to base specific time limits. In addition, the permits do restrict the duration of any such event qualitatively, to the extent of time needed for operating safety. This approach addresses varying types of bypass events more effectively than a single time limit, which would have to be set to accommodate the full range of bypass events.

Likewise, the permits retain the provision indicating that certain deviations in combustion chamber temperature, i.e., operation with a temperature that is more than 50 °F below the temperature during emissions testing, shall be considered emissions exceedances. This is appropriate as the feed dryer is one of the units at the plant that is subject to the requirement for a Control Improvement Program, which will effectively require that the dryer/oxidizer normally be operated with at least a 20 percent compliance margin. The provision to which this comment objects is intended to minimize future uncertainty about the appropriate treatment of the unit in circumstances where a deviation from the temperature requirement occurs. It does this by specifying a magnitude of deviation that must be assumed to result in an emission exceedance. The specific provision is adapted from provisions found in the federal New Source Performance Standards. The issued FESOP further explains that revised provisions defining excess emissions may be included in subsequent permits based on actual operating data and experience with the oxidizer.

34. The FESOP should include the requirements of 35 IAC 215.142, which limits the losses from any pump to more than 2 cubic inches of volatile organic liquid with a vapor pressure of more than 2.5 psia or greater at 70 °F in any 15 minute period.

This rule is not generally relevant to the plant as the vapor pressure of ethanol is less than 2.5 psia at 70 °F. It is also not necessary as other requirements more directly and effectively limit organic emissions attributable to leaking pumps and other components at the plant. These other requirements specify that leaks must be repaired independent of the volume of leaking material. This particular rule, if applicable, would allow losses

of up to four fluid ounces per hour from each pump.

Administrative Procedures

35. The notice for the public hearing prepared by the Illinois EPA was deficient because it did not include background information about Adkins' circumstances and the nature of fuel ethanol plants.

The public notice was not deficient. The purpose of a public notice for a proposed permit action is to inform the public of the Illinois EPA's proposed action and the opportunity to provide input before final action is taken. The public notice also identifies the locations where a copy of the application and other material are available for review by the public. To the extent that an individual believes that other information is relevant to the proposed action, he or she can submit such information with their comments.

General Comments

The following comments were made for which it is not appropriate or necessary for the Illinois EPA to provide a specific response:

- I feel that Adkins made false representations when it proposed the plant and has broken its promises to the Village of Lena and local residents.
- The Adkins' plant has helped to improve the local economy. It is also important for the many people in the area who have invested in the plant.
- When Adkins operated its original feed dryer, I was directly affected by the odors. When the wind was coming from the direction of the plant, the odors made it impossible for me to go out of my house and stay outdoors without feeling sick.
- When the wind is blowing our way, we had to stay indoors and couldn't even sit in our yard. We even had to hire someone to do the yard work because of the odors
- I had problems with the emissions from the plant. The emissions gave me headaches and made me nauseous. I got cramps in my sides and my eyes became irritated and burned. If the wind wasn't blowing toward me, then I knew there was someone else being affected.
- I believe the emissions from the plant have made me sick.
- The fumes that occurred when Adkins operated its original feed dryer affected me and I needed to use my asthma inhaler.
- When the wind was out of the east, foul odors from the plant could be smelled at the public schools in Lena. Children and teachers and with breathing problems were affected.
- Mistakes were made in the original design of the dryer that nobody is happy about, not Adkins, its investors, or the public.
- The construction of the plant lowered the value of my home and property.
- Adkins' has lost significant amounts of revenue since March 2003 when it permanently shut down the original feed dryer and began shipping out all feed wet.
- Even after the dryer was shut down, I have experienced significant odors from the plant.
- I don't trust Adkins. The Illinois EPA needs to make sure that Adkins installs a thermal oxidizer system on the plant and then continues to operate and maintain the system properly.

- We want the problems at the plant to be fixed, so that the plant is only an asset to the community.

Listing of Significant Changes between the Draft And Issued Operating Permit

- Condition 1.1(a)(ii): Further explanation included on how the permit limits individual units so that plant's emissions, in total, are held to below major source thresholds.
- Condition 1.1(b): Provision added generally recognizing that the Agreed Order for Interim Injunctive Relief (Agreed Order) imposes certain requirements on the plant, as also addressed in the permit.
- Condition 1.2(b): Limitation on the plant's ethanol production revised to 4.25 million gallons/month.
- Condition 1.6(b): Provisions added to address timing and content of material to be submitted by Adkins in response to odor complaint(s) following notification by the Illinois EPA of the filing of such complaints.
- Condition 1.9: Requirements added for operation of a meteorological monitoring station.
- Condition 1.10(b): Provision added generally recognizing that the permit does not relieve the Permittee of the responsibility to comply with the Agreed Stay Order (Neighbors for Good Neighbors, LLC, vs. Adkins Energy, LLC, Agreed Stay Order, United States District Court, Northern District of Illinois, Western Division, Case No. 03C50194).
- Condition 2.1.6(a) and elsewhere: The emission limit for the boiler that was established by the Agreed Order is noted as such. Similar notes are added elsewhere in the permit for emission limitations and control requirements that were established by the Agreed Order.
- Condition 2.3.1: Description of grain receiving operation revised to include receiving of grain by rail, as well as by truck.
- Conditions 2.3.6/2.6.6(b)(ii): Particulate matter (PM) emissions limits for the dry feed conveyor moved from Condition 2.3.6, which otherwise addresses grain receiving and handling, to Condition 2.6.6(b)(ii) with other feed related operations.
- Conditions 2.4.5(a)(i) and 2.5.5(a): Provisions setting operational limits for key operating parameters of the fermentation and distillation scrubbers further developed, including provisions for such limits to change in conjunction with future emission testing and provisions to address Clean-In-Place Cycles.

- Conditions 2.4.9(b) and 2.5.9(b): Recordkeeping for the fermentation and distillation units further developed, including records related to Clean-In-Place Cycles and, for distillation, records related to use of the by-pass stack and backup use of the distillation scrubber.
- Conditions 2.4.10(b) and (c) and Conditions 2.5.10(b) and (c): Reporting for the fermentation and distillation units developed with additional provisions for reporting of deviations.
- Condition 2.5.4: Non-applicability provision for the distillation units enhanced with a provision addressing the non-applicability of federal New Source Performance Standards for distillation and reactor processes (40 CFR 60, Subpart NNN and RRR).
- Condition 2.6.1: Description of the new feed drying system developed to include a general explanation of the role of the construction permit in addressing the startup and shake down of the system.
- Condition 2.6.5(c)(v): Provisions setting operational limits for the control system for the feed dryer further developed to exclude the period of time during shake down when operation is addressed by the construction permit. (During this period, the construction permit requires that the feed dryer and associated control equipment be operated to the extent reasonably practicable to control emissions.)
- Condition 2.6.5(f): Provisions requiring written operating procedures for the feed dryer further developed to require that such procedures provide for good air pollution control practices and address startup, normal operation, shutdown and likely malfunction and upset events.
- Condition 2.6.8(a): Provisions for operational monitoring for the feed dryer developed to address monitoring for the Venturi scrubber.
- Condition 2.6.8(c): Provisions for operational monitoring for the feed dryer developed to include logs for maintenance and repairs of monitoring devices.
- Condition 2.6.9(c): Recordkeeping for handling and load out of feed developed to include operating records for control devices and particulate matter emission data.
- Condition 2.6.10(a)(ii): Reporting for the drying, handling and load out of feed developed to include immediate notification to the Illinois EPA for incidents in which excess opacity lasts longer than 24 more minutes.

Condition 2.7.9(c)(ii): Recordkeeping for storage tanks developed to include copies of Material Safety Data Sheet (MSDS) for material stored in each tank.

Condition 3.3(c)(ii): General provision related to emission testing developed to address approval by the Illinois EPA, as part of the approval of an emission test plan, of alternative levels of operating parameters for control device(s) as part of an evaluation program leading to further emission testing.

Table I-A and I-B: Changes made to annual emissions limitations for various units, including new limitation to address additional units (e.g., dry feed transfer conveyors), new limitations for additional pollutants (e.g., PM/PM10 limits for fermentation, distillation, ethanol loading racks and wet cake transfer operation), and revised limitations (e.g., NOx limits for Feed Dryer/Cooler/Afterburner).

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For Additional Information

Questions about the public comment period and permit decision should be directed to:

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